

Name:

Without a calculator, evaluate each limit:

1. $\lim_{x \rightarrow 2} (x^2 + 3x - 1) =$

2. $\lim_{x \rightarrow 0} \frac{\sin x}{x} =$

3. $\lim_{x \rightarrow \infty} \frac{\sin x}{x} =$

4. $\lim_{t \rightarrow 3^+} \frac{2}{t - 3} =$

5. $\lim_{k \rightarrow 0} \frac{|k|}{k} =$

$$6. \lim_{y \rightarrow 2} \frac{y^2 - 3y + 2}{y^2 - 4} =$$

$$7. \lim_{t \rightarrow \infty} \frac{6t^2 + 5t}{2t^2 + 8} =$$

$$8. \lim_{t \rightarrow \infty} \frac{5t - 3}{t^2 - 9} =$$

$$9. \lim_{t \rightarrow \infty} \frac{6t^3 + 5t^2}{2t^2 - t} =$$

$$10. \text{ Given } f(t) = \begin{cases} 2t + 4 & \text{if } t \leq -1 \\ -3t - 2 & \text{if } t > -1 \end{cases}, \quad \lim_{t \rightarrow -1^+} f(t) =$$

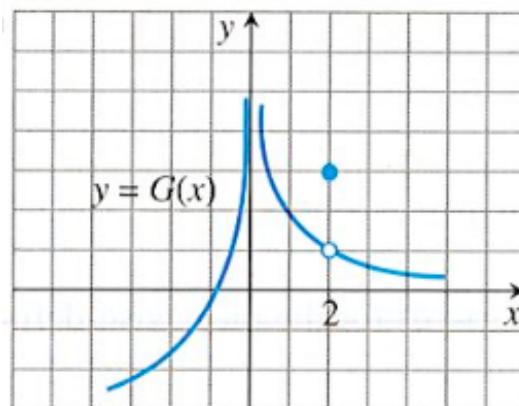
11. Given $f(t) = \begin{cases} 2t+4 & \text{if } t \leq -1 \\ -3t-2 & \text{if } t > -1 \end{cases}$, $\lim_{t \rightarrow -1} f(t) =$

12. Given $g(x) = \begin{cases} 5-x & \text{if } x < 2 \\ \frac{1}{2}x+2 & \text{if } x \geq 2 \end{cases}$, $\lim_{x \rightarrow 2} g(x) =$

13. Given the graph of $y = G(x)$, determine each of the following:

a. $G(2) =$

b. $\lim_{x \rightarrow 2} G(x) =$



OPTIONAL EXTRA CREDIT

Evaluate $\lim_{x \rightarrow 3} \frac{x-3}{x^3-27} =$